

WHAT IS CLAIMED IS:

1. A both-side recording apparatus with a sheet transport mechanism having a sheet transport roller and a pinch roller pressed against the sheet transport roller, a sheet discharge roller arranged on the downstream side of the sheet transport roller in a transport direction, and a rotating body pressed against the sheet discharge roller, characterized in that a recording medium can be transported to a position where a rear end of the recording medium is released from the sheet transport roller when a first surface is recorded at first, and then the recording paper is transported to a paper inversion unit in such a manner that the sheet transport roller and the pinch roller are released to transport the recording medium toward a reverse direction of the first surface recording by the sheet discharge roller, and then the pinch roller is pressed into contact with the sheet transport roller again to further continue the transport in the reverse direction.

2. A both-side recording apparatus according to claim 1, wherein a gap between the sheet transport roller and the pinch roller is set larger than an amount of deformation of the recording medium after the first surface of the recording medium is recorded.

3. A both-side recording apparatus according to claim 1, wherein the transportation of the recording medium is started toward the reverse direction after a predetermined time elapsed from termination of the recording of the first surface in the recording medium.

4. A both-side recording apparatus according to claim 1, wherein a second predetermined time is longer than a first predetermined time, when the recording medium is transported to a paper inversion unit in such a manner that the sheet transport roller and the pinch roller are released after the first predetermined time elapsed from the termination of the recording of the first surface in the recording medium, a rear end of the first surface is transported toward the reverse direction beyond a nip portion of the sheet transport roller, the transport of the recording medium is stopped for the second predetermined time, and then the sheet transport roller is pressed into contact with the pinch roller again to further continue the transport in the reverse direction.

5. A both-side recording apparatus according to claim 1, wherein a fourth predetermined time is longer than a third predetermined time, when the

recording medium is transported to the paper inversion unit in such a manner that the sheet transport roller and the pinch roller are released after the third predetermined time elapsed from the termination of the recording of the first surface in the recording medium, the rear end of the first surface is transported toward the reverse direction beyond the nip portion of the sheet transport roller, the sheet transport roller is pressed into contact with the pinch roller again, the transport of the recording medium is stopped for the fourth predetermined time, and then the transport of the recording medium in the reverse direction is resumed.

6. A both-side recording apparatus as in any one of claims 1 to 5, wherein the recording is performed to the recording paper by inkjet recording means for discharging ink from a discharge port.

7. A both-side recording apparatus as in any one of claims 1 to 5, wherein the total time from the termination of the recording of the first surface to the termination of the second predetermined time or the fourth predetermined time can be changed by density per unit area of data recorded in the first surface.

8. A both-side recording apparatus as in any one of claims 1 to 5, wherein the total time from the termination of the recording of the first surface to the termination of the second predetermined time or the fourth predetermined time can be changed by a kind of the ink used in the recording.

9. A both-side recording apparatus as in any one of claims 1 to 5, wherein the total time from the termination of the recording of the first surface to the termination of the second predetermined time or the fourth predetermined time can be changed by conditions of atmosphere such as ambient temperature and ambient humidity.

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10. A both-side recording apparatus as in any one of claims 1 to 5, wherein the total time from the termination of the recording of the first surface to the termination of the second predetermined time or the fourth predetermined time can be changed by the kind of the recording medium.

11. A recording apparatus including:  
a first transport roller which transports a sheet of a recording medium toward a predetermined transport direction;  
a pinch roller which cooperates with the first

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transport roller to support the sheet while sandwiching the sheet;

recording means for using a recording head discharging ink on the downstream side of the first transport roller in the transport direction to  
5 perform the recording to the sheet transported by the first transport roller;

a second transport roller which transports the sheet on the downstream side of the recording means  
10 in the transport direction;

a rotating body which cooperates with the second transport roller to support the sheet while sandwiching the sheet; and

an inversion means which inverts the sheet transported by the first transport roller toward the  
15 direction opposite to the transport direction and transports the sheet to the first transport roller,

characterized in that the recording is performed by the recording means while a rear end of the sheet  
20 is located on the downstream side of a nip portion of the first transport roller and the pinch roller, the sheet is transported in the reverse direction of the transport direction by the second transport roller until the rear end of the sheet passes through  
25 between the first transport roller and the pinch roller while the first transport roller and the pinch roller are released, and then the first transport

roller and the pinch roller support the sheet while sandwiching the sheet and transport the sheet to the inversion means.

5           12. A recording apparatus according to claim 11,  
wherein the recording is performed by the recording  
means while the rear end of the sheet is located on  
the downstream side of the nip of the first transport  
roller and the pinch roller, the sheet is transported  
10 in the reverse direction of the transport direction  
by the second transport roller until the rear end of  
the sheet passes through between the first transport  
roller and the pinch roller, the sheet is temporarily  
stopped, and then the first transport roller and the  
15 pinch roller support the sheet while sandwiching the  
sheet and transport the sheet to the inversion means.

          13. A recording apparatus according to claim 11,  
wherein the recording is performed by the recording  
20 means while the rear end of the sheet is located on  
the downstream side of the nip of the first transport  
roller and the pinch roller, the sheet is transported  
in the reverse direction of the transport direction  
by the second transport roller until the rear end of  
25 the sheet passes through between the first transport  
roller and the pinch roller, the sheet is stopped for  
a predetermined time, and then the first transport

roller and the pinch roller support the sheet while sandwiching the sheet and transport the sheet to the inversion means.

5           14. A recording apparatus according to claim 11,  
wherein the recording is performed by the recording  
means so that a blank space remains in a rear end  
portion of the sheet while the rear end of the sheet  
is located on the downstream side of the nip of the  
10 first transport roller and the pinch roller, the  
sheet is transported in the reverse direction of the  
transport direction by the second transport roller  
until the rear end of the sheet passes through  
between the first transport roller and the pinch  
15 roller, then the sheet is stopped for a predetermined  
time while the blank portion of the sheet is  
sandwiched by the first transport roller and the  
pinch roller, and then the sheet is transported to  
the inversion means.